

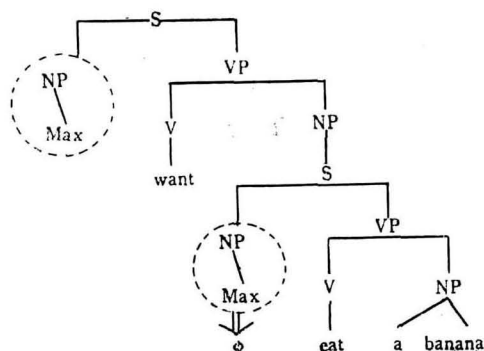
On Identifying the Remains of Deceased Clauses

James D. McCawley
(University of Chicago)

The verb *want* occurs followed by a variety of material:

- (1) a. Max wants Shirley to kiss him.
b. Max wants to eat a banana.
c. Max wants a lollipop.

Numerous transformational grammarians have argued that sentences of the forms (1a) and (1b) involve the same kind of underlying structure, namely one in which *want* has a sentence object, and differ only as regards whether the subject of the embedded sentence is deleted. Specifically, a rule of Equi-NP-deletion is posited, which deletes the subject of the complement of *want* if it is identical to the subject of *want*:



I will argue below that sentence of the form (1c) also have an underlying structure in which *want* has a sentential object, and that the surface object of *want* in (1c) is in fact the residue of an embedded clause. I will be concerned first with demonstration that there IS an underlying embedded clause in sentences like (1c), and then with determining exactly what that clause is. There is in fact a fairly obvious analysis of (1c) in which *want* has a sentential object, namely that in which it has the same underlying structure as *Max wants to have a lollipop* and undergoes not only Equi-NP-deletion but also deletion of the verb of the embedded clause, and it is in fact that analysis (or at least, something very close to

it) which I will be presenting justification for.

The first argument that the surface object in sentences like (1c) is the residue of an embedded clause has to do with time adverbs. The time adverbs in

- (2) Bill wants your apartment $\left\{ \begin{array}{l} \text{until June.} \\ \text{for 6 months.} \\ \text{while you're in Botswana.} \end{array} \right.$

do not give the time when the wanting takes place, as is especially clear when one considers sentences such as

- (3) Right now Bill wants your apartment until June, but tomorrow he'll probably want it until October.

in which there is another time adverb which explicitly indicates another time as the time when the wanting takes place. If an embedded clause such as *Bill have your apartment* is posited, that clause can serve as the scope of the time adverb (i.e. in (2), *until June* is not the time when Bill's wanting takes place but the time when Bill is to have your apartment if his wish is to be satisfied). Without such an embedded clause, there is nothing that the time adverbs can plausibly be taken as modifying.

Two other arguments are closely related to this one. First, positing an underlying sentence object with *want* allows a ready explanation of why clauses with *want* can have two time adverbs, as contrasted with verbs such as *paint*, for which such an analysis would be senseless and which allow only one time adverb:

- (4) a. A week ago Bill wanted your car yesterday.
b. *A week ago Bill painted your car yesterday.

Secondly, the hypothesis allows one to explain which of the two time adverbs controls the tense of *want*. In simple sentences, *yesterday* allows past tense but not future tense, and *tomorrow* allows future tense but not past tense:

- (5) a. *Yesterday I played 10 Scarlatti sonatas.
a'. Yesterday I'll play 10 Scarlatti sonatas.
b. Tomorrow I'll play 10 Scarlatti sonatas.
b'. *Tomorrow I played 10 Scarlatti sonatas.

In the following sentence¹, the tense is determined by *yesterday*, not by *tomorrow*:

- (6) a. Yesterday Bill wanted your bicycle tomorrow.
b. *Yesterday Bill will want your bicycle tomorrow.

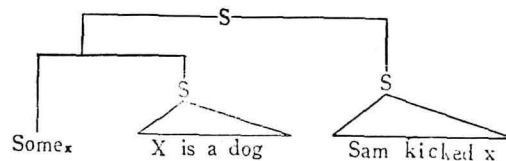
¹ This example was brought to my attention by Masaru Kajita.

If *want* in fact has a sentence object, the only coherent interpretation of the adverbs in (6 a) is that in which *yesterday* modifies the main clause and *tomorrow* the embedded clause. Each time adverb controls the tense of the clause that it modifies, and thus *yesterday* rather than *tomorrow* controls the tense of *want* in (6 a). The hypothesis that (1 c) arises through deletion from a structure with a sentence object thus gives one a way of predicting when *tomorrow* can co-occur with a past tense verb.

The next argument is based on facts that are more within the domain of logic than of what is usually regarded as grammar. The sentence *Max wanted a lollipop* is ambiguous between a 'referential' sense which implies that there is a lollipop such that Max wanted it, and a 'non-referential' sense which does not imply that. The referential sense has to do with a desire to have aspecific lollipop: having that specific lollipop will satisfy Max's desire and having any other lollipop will not suffice to satisfy it. The non-referential sense has to do with a desire that will be satisfied when Max has a lollipop, regardless of the identity of the lollipop. Quine(1960:154-6), discussing examples such as *Ernest is looking for a lion*, observed that that apparently simple sentence displays the same ambiguity as does the complex sentence *Ernest is trying to find a lion* and that the logical properties of the former can be accounted for in a natural way if one analyzes it as having the same logical structure as the latter. Specifically, let us assume that logicians are correct in representing the content of a simple sentence such as *Sam kicked a dog* by factoring out a quantifier and an associated noun:

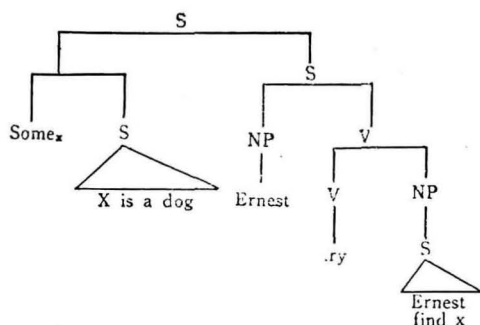
(7) (Some x : x is a dog) (Sam kicked x)

which may be recast in tree form as

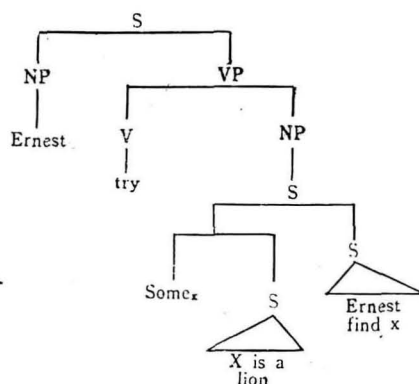


When applied to a complex sentence such as *Ernest tried to find a lion*, this factorization could take place on either the main or the subordinate clause, yielding the following two structures (8a) and (8b). (8a) is a natural way to represent the referential interpretation and (8b) the non-referential interpretation, since in each case the complement of *try* correctly matches the conditions for success of the attempt, and only (8 a) implies the existence of a lion that figures in Ernest's attempt; Quine thus proposes these structures

(8) a.



b.



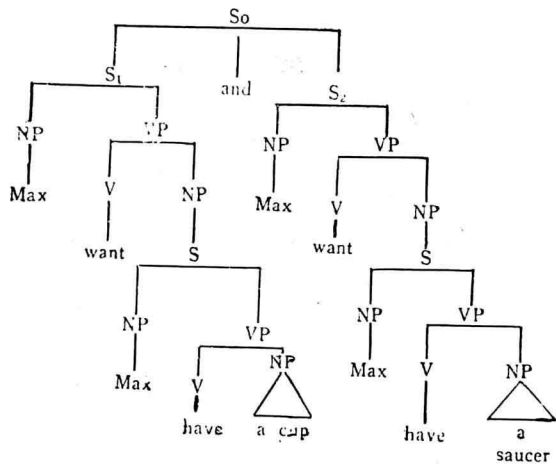
as representing the logical structure of the two senses of *Ernest is trying to find a lion* (and" also of the two senses of *Ernest is looking for a lion*). Note, however, that Quine's mode of representing the content of the non-referential interpretation is possible only if there is an embedded clause to serve as the scope of the quantifier. Thus, positing an underlying sentential object in (1c) allows one in a natural way to represent its nonreferential interpretation and correctly predicts that *Max wanted a lollipop* allows a non-referential interpretation but *Max ate a lollipop*, in which it would be absurd to posit a sentential object, does not.²

The last argument had to do with whether a quantifier applied to the main clause or the hypothesized subordinate clause, and the first group of arguments had to do with whether an adverb applies to the main clause or the hypothesized subordinate clause. A similar argument can be made having to do with conjoining. If *want* in fact has a sentential object in (1c), then there is nothing in principle to prevent both of the structures (9a) and (9b) from being realized as *Max wants a cup and a saucer*.

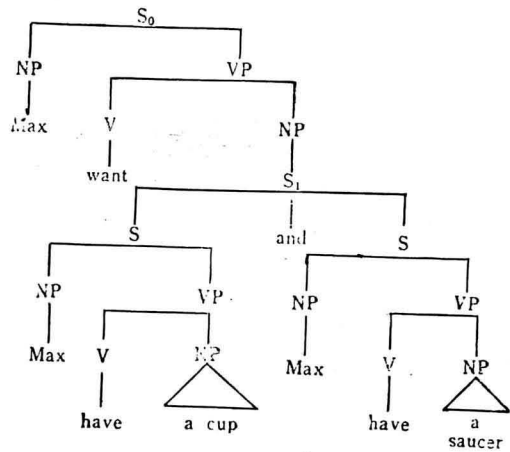
In (9a), both S_1 and S_2 would undergo Equi-NP-deletion and deletion of *have* and then S_0 would undergo conjunction reduction; in (9b), S_1 would undergo conjunction reduction, yielding *Max have a cup and a saucer*, and then S_0 would be of the appropriate form to undergo Equi-NP-deletion and deletion of *have*. *Max wants a cup and a saucer* is in fact ambiguous between a sense that fits (9a) and one that fits (9b): in the one case it refers to two independent desires, one for a cup and one for a saucer, and in the other case it

² It is far from clear that ALL non-referential NP's can be taken as originating in subordinate clauses. Such an analysis is particularly hard to justify in such cases as *John imagined a polar bear*, which Richard Montague indeed took as reason for rejecting Quine's account of non-referential NP's.

(9) a.



b.



refers to a single desire which is satisfied by Max's having both a cup and a saucer³. The same is true of conjunction with *or*: *Max wants a Cadillac or a Volkswagen* is ambiguous between a sense that implies that either he wants a Cadillac or he wants a Volkswagen (parallel to (9a)) and a sense that refers to a single desire which will be satisfied when he has either a Cadillac or a Volkswagen (parallel to (9b)). Not only does the hypothetical subordinate clause provide a natural way of distinguishing between these two interpretations, but it also allows one to maintain the otherwise valid generalization that constituents conjoined with *or* always arise through conjunction reduction from conjoined sentences⁴. Unless *want* has an underlying sentence object, there is no way in which *a Cadillac or a Volkswagen* could be derived by conjunction reduction in the sense which refers to a single desire, since that sense does not mean the same as *Max wants a Cadillac or he wants a Volkswagen*.

The next argument has to do with the pronoun-antecedent relation. At first glance, the antecedent of *it* in (10a) appears to be *a horse*; however, if the antecedent were *a horse*, then replacement of *a horse* by something of a different gender or number ought to give rise to a different pronoun, though in fact it does not:

- (10) a. Joe wants a horse, but his mother won't allow it.
 b. Joe wants some horses, but his mother won't allow it/*them.
 c. Joe wants a wife, but his mother won't allow it/*her.

³ Kenny (1963:122) observes that these two senses correspond to quite different states of affairs.

⁴ See McCawley (1972) for arguments in support of this claim.

In addition, if the antecedent of *it* were *a horse*, then it ought to be possible to use *allow* with an object that refers to a horse; however, *allow* requires a sentential object:

- (11) Joe's mother won't allow $\left\{ \begin{array}{l} \text{*Dobbin.} \\ \text{*that horse.} \\ \text{Joe to have a horse.} \end{array} \right.$

All of these facts are explained if *want* is taken as having an underlying sentence object: the antecedent of *it* in (10) can then be taken to be the sentence *Joe have a horse*, the pronoun will be *it*, since sentences count as neuter singular, and *allow* will not require anything other than the kind of object that it usually takes.

A further fact about pronominalization also supports the analysis with a sentential object, namely that the following sentence is interpreted as having a referential object if the pronoun is *them* and a non-referential object if the pronoun is *that*⁵:

- (12) Bill wants a Cadillac and a Volkswagen, and his girl-friend wants them/that too. *That* can serve as the pronominal form of a sentence, but *them* cannot. *Them* would have to refer to the Cadillac and the Volkswagen, which it could do only if the quantifier(s) binding *Cadillac* and *Volkswagen* has/have the whole sentence as scope, in which case *a Cadillac* and *a Volkswagen* have a referential interpretation.

I will henceforth take it as established that *want* has a sentential object in sentences like *Max wants a lollipop* and turn to the question of exactly what the deleted verb is. The question divides into a number of subsidiary questions: (i) Is there one specific verb that has been deleted, or can any of several verbs be deleted, i.e. can sentences with *want* be ambiguous as to what verb has been deleted? (ii) Is a word of English deleted, or is some semantic material deleted? This latter question has to be asked if one accepts the framework that I currently do, in which a grammar is a single system of rules that relate semantic structures to surface structures via intermediate stages. The grammar includes not only deletion rules, movement rules, and copying rules, but also rules that combine semantic units into complex units, and lexical insertion rules, which associate morphemes of the specific language to complexes of semantic material. Since there is no reason to expect that the lexical insertion rules will apply before all deletion rules (nor that they will apply after all deletion rules), it cannot be assumed from the outset either that a word of English is deleted or that semantic material is deleted.

The following sentences appear to be ambiguous as to what has been deleted:

⁵ This argument is due to Judith N. Levi.

- (13) a. I want more money than Sam has.
 b. Bill wants six children.
 c. Sam wants a million dollars.

These sentences allow semantically distinct paraphrases involving *have* and *get*. This is perhaps clearest in the case of (13c). Assume that Sam currently has \$900,000. The sense paraphraseable as *Sam wants to have a million dollars* implies that Sam's desire will be satisfied if he increases his present wealth by \$100,000; the sense paraphraseable as *Sam wants to get a million dollars* implies that Sam's desire will not be satisfied unless he gets a million dollars over and above the \$900,000 that he already has. This is a real ambiguity, since the distinction between the two senses is respected by rules of grammar; for example,

- (14) Sam wants a million dollars, and so does Bert.

is appropriate in the case where each of them wants to have a million dollars or in the case where each of them wants to get a million dollars over and above what he presently has, but not in the case where one of them wants to have a million dollars and the other wants to get a million dollars.

The second question raises a more general question: how could you tell whether lexical material or semantic material has been deleted? I have been able to think of only one way of determining which kind of material is deleted: to look at cases where words and meanings do not match neatly (e.g. idiomatic uses of a word, or cases where a word that normally may express the meaning in question is not allowed) and see whether it is the word or the meaning that determines whether deletion may take place. For example, one could argue that the word *have* is deleted by showing that to every sentence of the form *Max wants to have X*, no matter how idiomatic the combination *have X* is, there is a sentence *Max wants X* which expresses the same meaning. Or one could argue that semantic material meaning 'possess' is deleted by showing that a sentence *Max wants to V X* has an equivalent *Max wants X* if and only if 'V' expresses the notion 'possess' but that no one verb with that meaning was appropriate in all examples. On the basis of a not very thorough tabulation of sentence with *want*, I have concluded that in one class of sentences the English verb *have* is deleted and in another class semantic material meaning 'obtain' is deleted. The following sentences illustrate idiomatic uses of *have* from which *have* has been deleted:

- (15) I don't want a heart attack.
 I just want a good time.

I want a word with you.

I want sweetbreads for dinner tonight.

Have in *have a heart attack*, *have a good time*, *have a word with X*, and *have X for dinner* does not express the notion of possession but rather a variety of meanings that do not appear to be subsumable under one semantic generalization. Not quite all sentence of the form *Max wants to have X* allow deletion of *have* for example, corresponding to the idioms *have a ball* and *have it out with* there are no such sentences as

(16) *I want a ball.

*I want it out with Fred.

However, such cases appear to be rare enough that one can maintain that, subject to a few exceptions, all sentences of the form *X wants to have Y* allow deletion of the word *have*, not of some corresponding semantic material. The following sentences indicate that it is not always *have* that is deleted:

(17) I want \$10 from you by Friday.

Fabian wanted advice from me.

The boss wanted some originality from his employees.

I want \$50,000 a year.

To many speakers, all of these sentences sound somewhat awkward if *have* is supplied, though there is no awkwardness with *get* or such synonyms of it as *receive* or *obtain*:

(18) I want to get/?have \$10 from you by Friday.

Fabian wanted to get/?have advice from me.

The boss wanted to get/?have some originality from his employees.

I want to get/?have \$50,000 a year.

While each of the *have* sentences is felt to be perfectly acceptable by quite a lot of speakers, the existence of significant numbers of speakers who find them distinctly odd is enough to show that the acceptability of sentences with *have* does not fully parallel the acceptability of sentences with a deleted verb. Moreover, what is deleted in sentences like (17) can only be characterized semantically, not lexically, since idiomatic and 'non-basic' senses of *get* and *receive* cannot be deleted:

(19) I want to get up at 10:00.

I want to get elected treasurer.

I want to receive Warsaw on my radio.

(20) *I want up at 10:00.

*I want elected treasurer.

*I want Warsaw on my radio.

It is hardly a pleasing result that in one class of cases a word is deleted and in others semantic material is deleted; however, no other result seems to fit the facts⁶.

So far I have talked only about the verb *want*. There are many other verbs which sometimes take an infinitive object and sometimes a 'simple' object, and it is generally possible to give the same kinds of arguments as in the case of *want* that the 'simple' object results from deleting material from an underlying sentential object. Such verbs include *promise*, *offer*, *ask for*, and *hope for*. For example, *Fred asked Sam for a cigar or a cigarette* has the same ambiguity as does *Max wants a Cadillac or a Volkswagen*, and an embedded clause is necessary to represent the sense which implies that Fred asked that Sam either give him a cigar or give him a cigarette. However, the details of the deletion vary from verb to verb. With *promise*, Equi-NP-deletion is contingent on identity with the subject, i.e. *Max promised Shirley to wash the dishes* refers to Max's washing the dishes, not to Shirley's washing them. However, if

(21) Max promised Shirley a Cadillac

involved Equi-NP-deletion plus deletion of *have*, it ought to mean that Max promised Shirley that HE would have a Cadillac, whereas it actually means that he promised her that SHE would have one. Thus, either (21) involves Equi-NP-deletion that is controlled by a NP other than that which normally controls it, or it involves deletion not of *have*, but of, say, *give* plus its indirect object (i.e. it would be derived from *Max promised Shirley to give her a Cadillac*).

I will conclude this paper by pointing out that the kinds of arguments that I gave above for the existence of an underlying subordinate clause are applicable not only to the relatively innocuous cases where a subordinate clause loses its identity through an optional deletion of its verb, but also to cases that must be analyzed not in terms of deletion but in terms of the incorporation of material into the meaning of a semantically complex verb.

⁶ It will undoubtedly be of interest to investigate how this state of affairs came about. Since *want* originally meant 'lack', i.e. 'not possess', English quite likely went through a stage in which *X wants Y* meant 'X wants to have (=possess)Y'. If that is the case, then it appears that the older deletion rule has been generalized in two ways: by being allowed to cover not only 'possess' but also 'come to possess' and by being allowed to cover uses of *have* which do not express its core meaning of 'possess'. I would be interested in finding out whether this conjectural history is correct and, if so, whether the two generalizations of the deletion are independent and whether such generalizations are attested in other languages.

Consider, for example, the following example, due to Masaru Kajita:

(22) Yesterday Bill lent me his bicycle until tomorrow.

The same kinds of arguments as before show that *until tomorrow* modifies a subordinate clause. However, (22) cannot arise through deletion of a verb, since *lend* does not allow a sentential complement:

(23) *Yesterday Bill lent me to have his bicycle until tomorrow.

The only plausible way to set up a subordinate clause for *until tomorrow* to modify is to decompose *lend* into 'allow to have' (plus additional material indicating e.g. that the transfer of possession is temporary) and to take *until tomorrow* as modifying the clause 'I have Bill's bicycle', which would be a constituent of the semantic structure of *Bill lent me his bicycle*. A further example of an adverb which modifies a semantic constituent of a word is found in *Max closed the door temporarily*: *temporarily* gives not the time that Max's action of closing the door took place but the time that the door was to remain closed. Only if *Max closed the door* is analyzed along the lines of *Max caused (the door be closed)*⁷ is there a constituent that *temporarily* can plausibly be taken as modifying. This involves taking the adjective *closed* as semantically and syntactically more basic than the transitive verb *close*. While that may be disquieting in view of the fact that *closed* obviously divides morphologically into the verb *close* and an ending, it is a fact of life that morphological complexity does not always match syntactic and semantic complexity. Jespersen, for example, has observed that *true* is to *truth* as *beautiful* is to *beauty*, i.e. if *truth* is not only morphologically but also syntactically a derivative of *true*, then *beauty* is syntactically a derivative of *beautiful*, even though morphologically it is a constituent of *beautiful*. One final example of an adverb modifying part of the meaning of a word is due to Robert Binnick (1968):

(24) The sheriff of Nottingham jailed Robin Hood for four years.

This example is ambiguous as to what *for four years* modifies. In the less likely interpretation, *for four years* modifies the main clause *The sheriff of Nottingham jailed Robin Hood*, and that clause must be given an iterative interpretation: that for four years the sheriff kept repeatedly jailing Robin Hood, only to have him break out of jail. In the more likely interpretation, *for four years* gives the time that Robin Hood is to be in jail, and the verb *jail* must be decomposed into something like *cause to be in jail*, so as to provide a clause

⁷ I intend here the adjective *closed*, not the passive participle.

for the adverb to modify (namely *Robin Hood be in jail*)⁸. Exactly the same is true if the verb *jail* is replaced by *incarcerate*: *The sheriff of Nottingham incarcerated Robin Hood for four years* has the same set of interpretations as does (24) and thus requires an underlying structure containing a clause that means 'Robin Hood is in jail'. The fact that the verb *jail* has a corresponding noun *jail* but the verb *incarcerate* has no corresponding noun **carcer* thus has no bearing on how these sentences are to be analyzed.

I will conclude by making explicit the message of this commercial: the same kinds of considerations which support the innocuous and relatively uncontroversial deletion of *have* in *Max wants a lollipop*, an analysis which is perfectly consistent with the theory of Chomsky's *Aspects*, in which syntax and semantics are strictly segregated, also supports analyses like those of *lend* and *incarcerate*, in which the semantic constituents of words play a significant role in syntax. It thus appears that unless one is to restrict the domain of syntax so that it does not include such things as modification relations, which have traditionally been taken without question as within the domain of syntax, one must give up any boundary between syntax and semantics.

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⁸ Many details will have to be added to this decomposition. Robin Hood is not merely in a jail but is confined there against his will, and for many speakers the sentence does not imply that Robin Hood spent 4 years in a jail (it does not preclude his having escaped or his having been released early for good behavior) but only that he was required to be there for four years.